# ASTOR METAL FINISHES

## FABRICATING FOR **ELECTROPLATING**

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# FABRICATING FOR **ELECTROPLATING**

Gaining awareness over some of the intricacies of electroplating will assist with fabrication of the parts which are to be plated. This in turn will help improve production, affordability, lead time and quality.

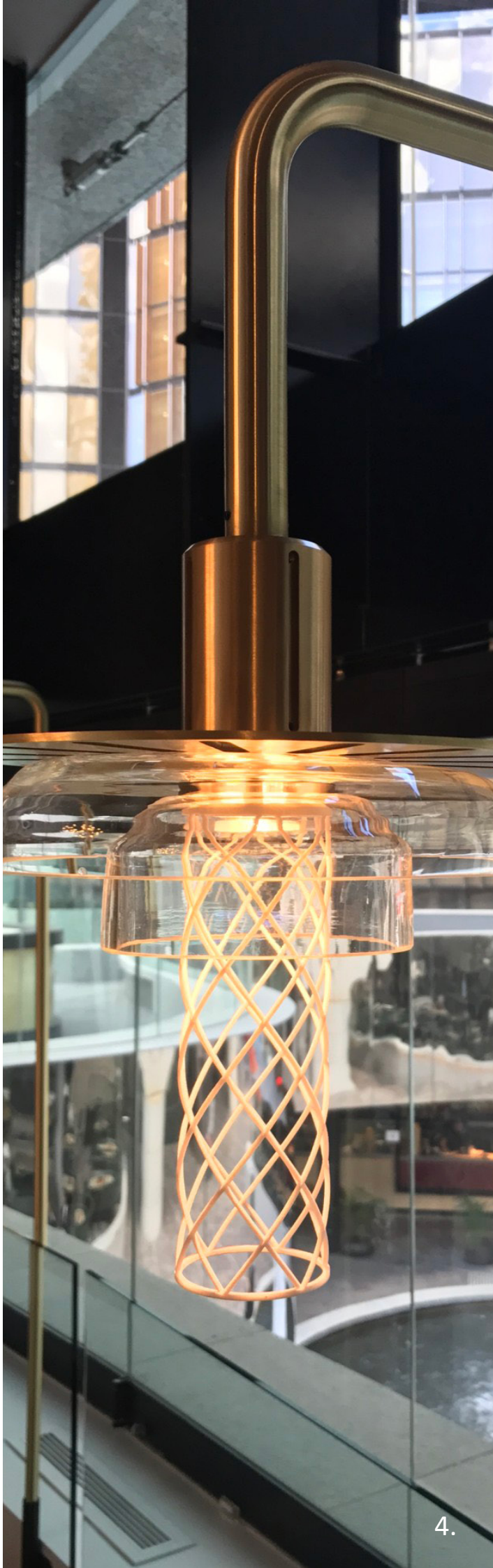
# FABRICATING FOR GENERAL SHAPES

Electroplating is the depositing of one finishing metal onto another base metal. Typically, the base metal is either stronger, lighter, more available or less expensive than the finishing metal.

The plating process relies on current flows. The technical properties of electroplating deposits **favour curved shapes and high points** — think tapware or tubular Corbusier and Breuer chairs.

Plating does not go into deep recesses or inside tubes, as these are deemed “low current”. This is especially the case with Chrome finishing, and it is the poorest performer when it comes to more intricate electroplating.

If sharp internal angles, connections, joins and recesses cannot be avoided, then it’s **vital to have cover plates or sleeves designed to hide these corners.** Alternately, these parts can be designed and fabricated as separate components, which can then be mechanically fixed after polishing and plating.

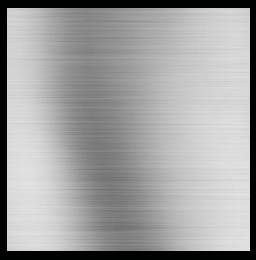


## CONSIDER TANK CAPACITIES

Large folded panels or frames may have other limitations. Please check by sending a rough sketch to us.

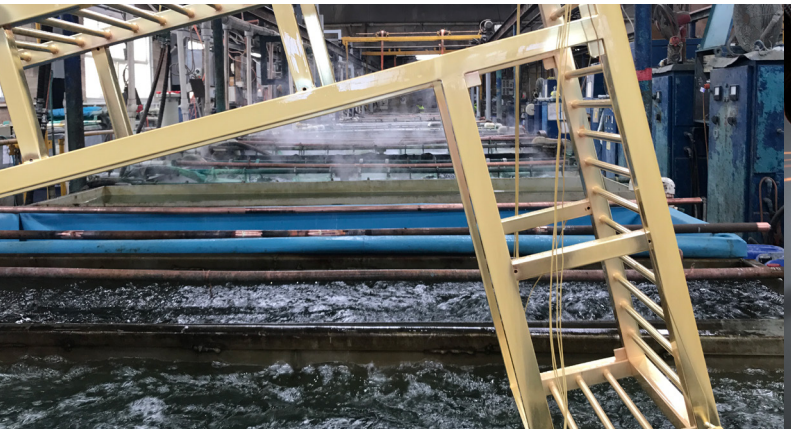
**BRASS:**
2700H x 1000W x 450mmD (580mm for nickel & chrome)

**MILD STEEL:**
2700H x 1000W x 450mmD (580mm for nickel & chrome) (2300L x 1000D for black oxide)



**ALUMINIUM:**
2700H x 950W x 450mmD

**STAINLESS STEEL:**
2600H x 950W x 450mmD



## ENSURING DRAINAGE FOR WELDED FRAMES

It's crucial to consider drainage when working with welded frames. For welded frames made from hollow tube, the component/frame is fully submerged with electric current in over 20 tanks.

Plating requires the solutions to flow in, around and out as quickly as possible to ensure a good plating result. **Trapped solutions in any step of the process — or even after — can create issues immediately or appear weeks later.**

The best plating results are achieved by avoiding pin holes, including in welds or metal, small lips, close welded sections and porous metal. Welded tube structures are almost always not completely sealed, so dressing welds and the use of TIG on stainless is often the best solution.

Stainless steel tube also offers the benefit of not requiring pre-polishing — see below.

## POLISHING ON SEEN FACES AND EDGES

Our finishes are achieved by varying combinations of polishing, plating, and post-plating treatments. The base metal will largely affect the finish which is why particular base metals can be beneficial (see below: "SELECTING A BASE METAL").

Astor offers in-house polishing on all metals. For welded items, we will often recommend that they be pre-polished before the welding is done.

We usually ask that you **supply notes, sketches or mark-ups that clearly show the seen faces and edges** on items, components and profiles, as only these areas need polishing. This will also inform us of the best method for racking.

# CONTACT POINTS FOR RACKING

As with powder coating and anodising, parts to be electroplated require holding through the production/plating line.

With electroplating this is even more important, as the contact points are vital to electrical contact and current flow around the parts to allow the deposited layer of metal to plate. For that reason, contact points need to be secure and suitably spaced. Plating require racks, hooks or coper wires.

On the best products, these contact points are not seen when installed because they are hidden with flanges, cover plates, trims etc. So, where possible, fabricate with brackets, holes, small returns and cover plates or open ended tubes.

**Potential solutions that Astor offers in-house include:**

- Blind holes, >3mm aluminium
- Soldering or braised wires, >1.2mm brass or 1.2mm stainless
- Welded nuts, >3mm mild steel

**Other suggestions include:**

- Threads
- Tabs/tags

As previously mentioned, letting us know which areas are seen faces lets us help you achieve the best possible result, in which contact points won't be visible.

# BASE METAL RECOMMENDATIONS

Below are more specific recommendations for base metals, based on components that we are commonly asked about:

Large flat or folded panels that have been specified for:

- Mirror finishes: We recommend BA or mirror stainless (min 1.2mm thickness)
- Brushed or antique finishes: We recommend #4, linished or brushed stainless (min 1.2mm thickness
- Aged finishes: We recommend 2B stainless (min 1.2mm thickness)

- For joinery profiles, lighting or laser-cut signage, aluminium will likely be the best choice.
- Welded frames and handrails are usually stainless steel.
- For external items, generally stainless steel is recommended. See below section ‘how to order for an outdoor or wet area’ for more information.

For further advice and assistance, our project team is always available. We are open to reviewing images, photos and sketches to assist in design and fabrication — to help ensure your products or projects reach the best possible quality in the most efficient way possible.

# HOW TO ORDER FOR AN OUTDOOR OR WET AREA APPLICATION

Stainless Steel is highly recommended for external applications as it is a strong metal with inherent corrosion resistance. Another feature is the lack of porosity in both stainless profile and the welds. Brass base metal is also an option for external use where suitable (although brass generally requires thicker gauges for strength of base metal itself). Brass does not require DUPLEX plating.

Where the base metal being finished is ALUMINIUM or MILD STEEL for external use, it requires DUPLEX plating under the final finish. This is two layers of nickel offering different plating qualities for increased corrosion resistance, over which we can electroplate other decorative metals.

An example of exterior aluminium specification would be:

**Finish:** Light Bronze Oiled

**Plating:** Duplex Nickel-plating 60 – 70 microns
Heavy-brass plating 10 – 15 microns

**Treatment:** Aging Process chemical patina of brass

**Topcoat:** Oil rubbed

**Maximum plating capacities:**

Aluminium: 2700L x 950D x 450mmW

Stainless flat panels and 2D frames: 2600H x 1000mmW

Stainless welded 3D frames: 2600L x 950D x 450mmW

Mild steel: 2700H x 1000mmW

## REQUESTING A QUOTE

To help you receive a faster, more accurate quote, let us know the following things:

- The type of project/project name
- The finish required/specifier
- Base metal (stainless, aluminium, brass or mild steel)
- Description of items/components — including profile, dimensions, lengths and quantity
- Which faces/edges are seen?
- Will holes be provided for racking?
- Have you checked our maximum capacities?
- What is project timing (if known)?

## **GET IN TOUCH** WITH US

Let’s talk about how we can help you find
a beautiful, customised solution to fit your metal finishing needs.

**If you’re ready to take the next step on your project, request a quote here.**

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